

# Benefits of PBL Model Integrated Projection Media in Increasing Social Sciences Knowledge Competency

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## ARTICLE INFO

### Article history:

Received July 05, 2023

Accepted October 06, 2023

Available online October 25, 2023

### Kata Kunci:

Model PBL, Media yang Diproyeksi, IPS

### Keywords:

PBL Model, Projected Media, Social Sciences



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## ABSTRAK

Proses pembelajaran di sekolah dasar khususnya pada muatan pembelajaran IPS belum terlaksana secara optimal, di mana pembelajaran hanya mengacu pada satu buku sumber belajar sebagai tolak ukur dalam belajar. Tujuan penelitian ini untuk menganalisis pengaruh model problem based learning berbantuan media yang diproyeksikan terhadap kompetensi pengetahuan IPS siswa kelas V SD. Penelitian ini merupakan penelitian eksperimen dengan desain eksperimen semu menggunakan rancangan kelompok non-equivalent control group design. Populasi dari penelitian ini adalah seluruh kelas V SD dengan jumlah siswa 418 orang. Sampel ditentukan dengan teknik cluster random sampling. Sampel dalam penelitian ini adalah kelas V SD. Data kompetensi pengetahuan IPS dikumpulkan melalui metode tes dalam bentuk pilihan ganda biasa. Data yang diperoleh selanjutnya dianalisis dengan statistik inferensial (uji-t). Hasil penelitian yaitu terdapat pengaruh yang signifikan model Problem Based Learning berbantuan media yang diproyeksikan terhadap kompetensi pengetahuan IPS siswa kelas V SD. Disimpulkan bahwa model Problem Based Learning berbantuan media yang diproyeksikan dapat meningkatkan kompetensi pengetahuan IPS siswa kelas V SD. Implikasi penelitian ini yaitu penerapan model Problem Based Learning berbantuan media yang diproyeksikan memudahkan siswa dalam memahami materi pembelajaran.

## ABSTRACT

The condition of a pluralistic society will potentially be prone to social conflict, thus disrupting the integrity of harmonious social relations in society. The research aims to develop English language teaching materials based on multicultural values in higher education. This research uses research and development involving Analysis, Design, Development, and implementation (ADDIE) models and mixed methodology. In collecting data, several instruments were used: observation, in-depth interviews, Focus Group Discussions (FGD), document analysis, and questionnaires. This research involved student participants and lecturers. The data analysis technique used is qualitative and quantitative descriptive analysis. The findings of this research show that in English textbooks, readings and twenty exercises that contain multicultural values are expected to be found. In the English for Agribusiness textbook, researchers did not find multicultural values. In addition, the results of the needs analysis show that teachers and students need to provide appropriate techniques and strategies for teaching English through multicultural values. The validity results show that multicultural education can be taught using English material. Based on the effectiveness results, it shows that multicultural education is effective. Multicultural education needs to be involved by including multicultural values in English teaching materials, especially in universities. For future research, it is necessary to find English language teaching materials with other methodologies and specific fields at the higher education level.

## 1. INTRODUCTION

Education is a conscious way for humans to develop their talents and thinking abilities. Education is a very important aspect of life and must be taken seriously to get maximum results (Lattu, 2018; Wahono, 2018). To achieve educational goals, of course there are many obstacles that occur, one of which is the low quality and quality of education in Indonesia. The low quality and quality of education in

Indonesia is caused by several factors, such as a curriculum that is not in accordance with current student needs and a learning process that has not been implemented optimally (Sujana, 2019; Wisada et al., 2019). The curriculum has a very important role in implementing the learning process. The curriculum is considered as a guideline or basis for designing the learning process carried out by teachers and students in class (Ikhsan & Hadi, 2018; Shofiyah, 2018). Currently, the curriculum used in the education sector is the 2013 curriculum. The 2013 curriculum is also called the character-based curriculum (Prasetyo & Hamami, 2020; R. Rachmawati, 2020). This character-based curriculum can be explained as learning that aims to improve the affective aspects to be achieved from balanced competencies between attitudes, skills and knowledge (Kusumaningrum et al., 2020; N. Rachmawati et al., 2022).

Implementing the 2013 curriculum, the lesson content given to students is integrated into one commonly known as integrated thematic. In integrated thematic learning, it covers various subjects that are generally found in the learning process of elementary school students. Subjects in integrated thematics include Mathematics, Indonesian, Natural Sciences, Social Sciences, Arts and Culture, PPKn, and PJOK. The implementation of the learning process in the 2013 curriculum is very student-centered, where students are the focus in implementing the learning process. Teachers do not explain much of the learning material, because in learning that applies the 2013 curriculum the teacher is only a facilitator whose job is to accompany students in learning, help students solve their own problems, and direct students in learning (Fanani, 2018; Kusumaningrum et al., 2020). The teacher no longer gives lectures on the learning material that is being discussed in class, but the teacher gives problems to students and invites students to find their own solutions to solve these problems. In learning the 2013 curriculum, it is very important for teachers to be able to implement facilities and infrastructure that support the implementation of the learning process. This is in accordance with the demands of the 2013 curriculum, where teachers are required to be creative and innovate in designing the learning process. Teacher creativity is also supported by utilizing good learning facilities in accordance with today's sophisticated technological developments. Teachers can create innovative learning if it is supported by learning tools that are appropriate to the learning process to be implemented. There are many types of learning tools that are important for teachers to prepare in carrying out the learning process with students in class, including appropriate learning models.

However, in reality the learning process in elementary schools, especially in Social Sciences (IPS) learning content, has not been implemented optimally. This is because students' activeness in learning activities is not yet optimal. Most of the learning only refers to one book given by the school to students as a benchmark for learning resources. Thus, it causes boredom in students because the learning carried out tends to be watched and does not have a good impact on improving student learning. This is supported by the results of observation activities carried out three times in class V and the results of interviews conducted with the class V homeroom teacher at SDN Gugus Diponegoro for the 2022/2023 academic year. The results obtained were that during the learning process, students paid less attention and were not serious about following the learning carried out by the teacher. Students feel bored because the learning process is less varied. Lack of students' ability to analyze and solve the problems given. Students are less enthusiastic and have difficulty understanding lessons because they are only focused on remembering or memorizing concepts, so learning becomes less meaningful. Teachers are also less innovative in designing the learning process by implementing facilities and infrastructure that are able to support students' learning interests. Thus, social studies learning in class V at SDN Gugus Diponegoro tends to decline and students' social studies knowledge competency is relatively low.

The solution that can be presented is that teachers can apply appropriate learning models to support the implementation of the learning process. Learning models are very important for teachers to use in designing the learning process. This is because a learning model is a plan that is used as a benchmark in designing learning in the classroom and in learning tools (Fitri & Agusfitriani, 2018; Maryati, 2018). The learning model is a conceptual framework for designing and carrying out learning activities in the classroom. The learning model is a conceptual basis that describes systematic procedures for organizing student experiences to achieve the desired learning goals and functions as a guide for an educator (Pramana & Suarjana, 2019; Ramadhani & Hanggara, 2019). Having a learning model is very important for teachers and can certainly make it easier for teachers to design innovative learning processes for students. In the learning process, teachers can also combine several learning tools that are deemed appropriate to support the implementation of the learning process in the classroom. Apart from learning models, teachers can also use learning media that are suitable for implementing the learning process in the classroom. Learning media is defined as an intermediary between sending information and receiving information (Hamidah et al., 2020; Sasongko et al., 2022). Learning media is something that can be used to convey messages or information in the learning process so that it can encourage students to learn (Rohmawati & Kristanto, 2018; Wahyuni et al., 2021). Various learning media can be used to support

learning activities. Learning media certainly has a good impact in supporting the implementation of learning, where by applying learning media in the learning process it will make it easier for teachers to explain learning material, students become interested in participating in learning, students are active in learning, understand well the material presented well. apply learning media, and students' understanding competence increases (Mamat et al., 2018; Wahyuni et al., 2021). The application of learning media and other learning tools, such as learning models, of course really helps increase students' knowledge competency in learning. This is because the learning models and media used are readjusted to the characteristics of the students, the learning material that will be reviewed, and the learning objectives that will be achieved. By applying media and learning models, you can certainly create an optimal learning process and achieve the expected learning goals.

Referring to the curriculum used, namely the 2013 curriculum, it is very appropriate to use one of the learning models, including problem based learning. The problem based learning model is a learning model that is characterized by real problems as a context for students to learn problem solving skills and gain knowledge so that students are able to master the competencies achieved and take an active role in them (Hadibarata & Rubiyatno, 2019; Puspitawati et al., 2018; Wati & Widiansyah, 2020). The problem based learning model is a learning model that uses real world problems as a context for students to learn critical thinking and problem solving skills, as well as gaining essential knowledge and concepts from the subject matter (Hadibarata & Rubiyatno, 2019; Nastiti et al., 2018). By implementing the problem based learning model, students are required to be active in solving a problem and will help activate students and improve students' understanding of concepts well. Apart from that, there is an update in the solution presented, namely the use of a projected media-assisted learning model. Previous research findings stated that students' science learning outcomes increased through the problem based learning model assisted by audio visual media (DMA Sujana et al., 2021). Problem-based learning based on socio-scientific issues influences the scientific literacy and problem-solving skills of junior high school students (Hestiana & Rosana, 2020). This update was designed based on the results of research which found that students had a low understanding of concepts in the learning process. By using the projected media-assisted problem based learning model, it is projected that students' understanding of concepts can be increased, especially in social studies learning, and the learning process can be carried out optimally. Students' interest in learning will increase and the application of projected media can also attract students' enthusiasm in participating in the learning process. The aim of this research is to analyze the influence of the projected media-assisted problem-based learning model on the social science knowledge competency of fifth grade elementary school students.

## 2. METHOD

This research was carried out at Gugus Pangeran Diponegoro Elementary School, West Denpasar. This research was carried out at seven state elementary schools in the Prince Diponegoro Cluster, consisting of SD Negeri 1 Pemecutan, SD Negeri 3 Pemecutan, SD Negeri 7 Pemecutan, SD Negeri 10 Pemecutan, SD Negeri 11 Pemecutan, SD Negeri 16 Pemecutan, and SD Negeri 17 Pemecutan . This research was carried out starting in September 2022 with experimental activities carried out from March 2023 to April 2023. This research activity was carried out in the second semester (even) of the 2022/2023 academic year. The type of research used is quantitative research with quasi-experimental research methods. Quasi-experimental has a control class, but can still fully control external variables that contribute to the implementation of research, because when observing student behavior, the researcher's abilities have limits, especially when students are at home or outside the school environment (Sidiq et al., 2021; Yustina et al., 2020). The type of quasi-experimental design used in this research is a non-equivalent control group design. In the non-equivalent control group design, one class will be formed which acts as an experimental group which is taught using the problem based learning learning model assisted by projected media and a control group which is taught without using the problem based learning learning model assisted by projected media.

Population is all objects in a study. Population is an area that has quality objects or subjects and has certain characteristics determined by researchers to be researched or studied, then conclusions are drawn (Agung, 2017; Agung & Jampel, 2022). Population is all parts of objects, people, events, or other things that are the center of study in a research (Gusmania & Dari, 2018; Witari et al., 2018). The population in this study was all class V (five) of SDN Gugus Pangeran Diponegoro for the 2022/2023 academic year, consisting of 15 classes in 7 elementary schools. The total population of this study was 418 class V students. The requirements for randomization to be carried out in determining the population in this study include that the population must be equal.(Aeni, 2018; Marwati & Basri, 2018). So, it is necessary to carry out an equality test using one-way analysis of variance (Anova A). The data used in

carrying out the equivalency test with the one-way ANOVA is the end-of-semester assessment score on the social studies subject content. The one-way ANOVA test is intended to determine whether there are differences in final semester assessment scores on social studies subject content. A sample is the total and special characteristics of a population (Astriani & Sudarma, 2019; Romaliyana et al., 2019). A sample is a portion of the population taken using certain techniques and is considered to be a representation of the entire population (Krismayoni & Suarni, 2020; Laily et al., 2020). The class chosen as the sample is the class that is formed as is. Sampling in this study was carried out using a cluster random sampling technique, which was randomized or randomly assigned to class. In this technique, each individual has the same opportunity or opportunity to become the object of research (Alhakiki & Taufina, 2020; Paramita et al., 2020).

This technique is used if members of the population are considered homogeneous. Thus, in this research each class received the same rights and had the opportunity to be a sample. After carrying out the Anava A test, it was stated that the entire class V population of SDN Gugus Pangeran Diponegoro was equivalent for the 2022/2023 academic year. Next, randomization was carried out to determine the experimental and control classes from the 15 existing classes. Based on the randomization results, there were 30 students in class VA SDN 11 Pemecutan as the experimental group and 29 students in class VB SDN 10 Pemecutan as the control group. The data collected included data on students' social science knowledge competency which was taught using the projected media-assisted problem based learning model. To be able to collect this data, the data collection method used is the test method. The test method is a test method which is a way to obtain data in the form of a worksheet that must be completed by students who are used as research objects and can produce a score (interval) (Paranna & Airlanda, 2020; Winoto & Prasetyo, 2020). In general, this test method is used to measure the cognitive domain (Ngura et al., 2020; Suandika et al., 2020). There are two types of test methods that will be given to research subjects, namely tests given before giving treatment using a projected media-assisted problem based learning model (pre-test) and tests given after giving treatment using projected media-assisted problem based learning model. Data collection was carried out in class V at SDN Gugus Pangeran Diponegoro. After the results are found, they will be analyzed using inferential statistical analysis of the t-test and obtain a final conclusion on the results obtained by the t-test calculation analysis.

### 3. RESULT AND DISCUSSION

#### Result

Based on the data analyzed, it is data on students' social science knowledge competencies taught using the media-assisted problem based learning model which is projected for class V at SDN Gugus Pangeran Diponegoro for the 2022/2023 academic year. This research obtained results which were grouped into several groups of data, including pre-test data on social science knowledge competency in the experimental class and control class and post-test data on social science knowledge competency in the experimental class and control class. Collection of pre-test and post-test data on social science knowledge competency that was obtained from the experimental group and control group, then analyzed using the normalized gain score test. The recapitulation of the results of the normalized gain score test on pre-test and post-test data on class V social science knowledge competencies is presented in Table 1.

**Table 1.** Recapitulation of Normalized Gain Score (GS<sub>n</sub>) Results for Experiment Class and Control Class

Data Group	Average pre-test	Average post-test	N-Gain	Category
Experiment	15.57	22.63	0.49	Currently
Control	13.21	16.62	0.20	Low

Modified from (Larasanty, 2020; Setyaningsih & Canda Sakti, 2020)

Based on the calculation of the normalized gain score test on pre-test and post-test data on social science knowledge competency, it can be obtained that the level of effectiveness of the treatment given to the experimental class, namely the media-assisted problem based learning model, is projected to be in the medium category. So, from these results it can be stated that the treatment given to the experimental class was effective in increasing the social science knowledge competency of class V students at SDN Gugus Pangeran Diponegoro for the 2022/2023 academic year. After obtaining the results of the normalized gain score test calculation, we will continue to look for the results of the experimental research t-test calculations (uncorrelated independent samples). Before carrying out the t-test calculations, a prerequisite test is first carried out consisting of a data distribution normality test and a homogeneity test. To carry out statistical tests based on parametric data, the data must be normally distributed (Agung,

2017; Agung & Jampel, 2022). Data on each variable analyzed must be normally distributed. This test was carried out on experimental class data and control class data with the aim of finding out whether the distribution of social science knowledge competency data in the two classes was normally distributed or not. The normality test for data distribution in this study was carried out using the Chi-Square formula. The recapitulation of the normality test results for the distribution of pre-test and post-test data in the experimental group and control group is presented in Table 2.

**Table 2.** Recapitulation of Normality Test Results of Pre-Test and Post-Test Data Distribution

No.	Competency Data Group Science knowledge	$\chi^2_{\text{count}}$	$\chi^2_{\text{table}}$	Conclusion
1	Pre-TestExperiment	1.48	11.07	Normal
2	Pre-TestControl	4.99	11.07	Normal
3	Post-TestExperiment	5.58	11.07	Normal
4	Post-TestControl	6.39	11.07	Normal

Modified from (Krismayoni & Suarni, 2020; Paramita et al., 2020)

Calculation of the normality test for data distribution can be obtained from pre-test and post-test data for the experimental class and control class which can be concluded with  $x^2_{\text{count}} < x^2_{\text{table}}$  which means that all data is normally distributed. Once it is obtained that the data is normally distributed, it can be continued by carrying out a variance homogeneity test. The purpose of carrying out the homogeneity of variance test is to be able to compare the largest variance and the smallest variance in the two groups (Agung, 2017; Agung & Jampel, 2022). The homogeneity of variance test was carried out using the Fisher (F) formula. The recapitulation of the results of the pre-test and post-test homogeneity of variance tests in the experimental group and control group is presented in Table 3.

**Table 3.** Recapitulation of Pre-Test and Post-Test Variance Homogeneity Test Results

No.	Competency Data Group Science knowledge	$F_{\text{count}}$	$F_{\text{table}}$	Conclusion
1	Pre-Test Experimental Group and Control	1.78	4.01	Homogeneous
2	Post-Test Group Experimentand Control	1.19	4.01	Homogeneous

Modified from (Pramana & Suarjana, 2019; Witari et al., 2018)

Calculation of the homogeneity of variance test can be obtained from pre-test and post-test data which states that the variance of social science knowledge competency data for the experimental and control classes is homogeneous. Based on the results of the data calculation analysis, it was stated that the data was normally distributed and homogeneous. So, you can continue carrying out t-test calculations. The aim of carrying out this t-test is to be able to test the hypothesis in the research (Agung, 2017; Agung & Jampel, 2022). The t-test calculations in this research were carried out using the formula pooled variance. The recapitulation of the t-test results is presented in Table 4.

**Table 4.** Recapitulation of T-Test Calculation Results

Group	Lots Subject (n)	Average Score (X)	Variance (S <sup>2</sup> )	et al	$t_{\text{count}}$	$t_{\text{table}}$
Experiment	30	22.63	19.27	57	5.46	2.00
Control	29	16.62	15.24			

Modified from Krismayoni & Suarni, 2020; Paramita et al., 2020)

The t-test calculation shows that  $t_{\text{count}} = 5.46 > t_{\text{table}} = 2.00$ , so  $H_0$  is rejected and  $H_1$  is accepted. So, it can be concluded that there is an influence of the projected media-assisted Problem Based Learning model on the social science knowledge competency of fifth grade students at SDN Gugus Pangeran Diponegoro.

## Discussion

Based on the results of the t-test calculations carried out, results were obtained which showed that  $t_{count} > t_{table}$ , so that  $H_0$  was rejected and  $H_1$  was accepted. The results show that there is a significant difference in social science knowledge competency between the group of students who were taught with the projected media-assisted problem based learning model and the group of students who were not taught with the projected media-assisted problem based learning model for class V students at Gugus Pangeran Diponegoro Elementary School. 2022/2023 academic year. There are significant differences in the groups taught with the media-assisted problem based learning model which is projected to provide good learning outcomes, especially in social studies learning content which emphasizes student activity, student cooperation, and improving students' reasoning abilities which leads to increased social studies knowledge competency. Problem based learning is the right model to understand the content of the lesson because students are faced directly with real problems so that learning becomes meaningful for students (Cahyo et al., 2018; Negara et al., 2021). In implementing the problem based learning model assisted by projected media, students are required to be active in solving a problem. Implementation of learning using a problem based learning model assisted by projected media, starting from orienting students to the problem, organizing students around the problem, guiding them to investigate independently or in groups, developing and presenting work results, analyzing and evaluating the results of problem solving. By implementing the projected media-assisted problem based learning model, students' social science knowledge competency can increase and provide optimal learning understanding for students.

The projected implementation of the media-assisted problem based learning model is very effective and appropriate for use in supporting the learning of class V students and increasing students' social science knowledge competency. The advantages of implementing the projected media-assisted problem based learning model are that it is easy for teachers to operate in the learning process, practical in use, does not require difficult technical procedures, the message to be conveyed is easier, and students easily understand the material provided. Therefore, projected media allows students and teachers to develop their knowledge, abilities and skills to the maximum. The research results are strengthened by previous research findings stating that the use of the problem based learning model is suitable for use in learning and has a significant influence. It can be seen from improved student learning activities, increased understanding of concepts, and student creativity in solving problems well (Maskur et al., 2019; Sudarmin et al., 2019). The application of the problem based learning model used was found to be effective in improving elementary school students' social studies learning outcomes (Saputro et al., 2021; Savitri et al., 2021). The story telling method assisted by an LCD projector can influence the value of listening skills, speaking skills, listening skills, and integrated speaking skills (Narmaditya et al., 2018; Sumardjoko, 2018).

There is an update presented in this research, namely the application of a problem based learning model assisted by projected media. This update was designed based on the results of research which found that students had a low understanding of concepts in the learning process. There are several advantages of this research update which applies the media-assisted problem based learning model which is projected in social studies learning, namely that students better understand the concepts being taught because they discover the concepts themselves, students are actively involved in solving problems and require students' higher thinking skills, Knowledge is embedded based on schemata owned by students, so that learning is more meaningful. Students can feel the benefits of learning, because the problems they solve are directly related to real life, making students more independent and mature, able to give aspirations and accept other people's opinions, as well as instilling positive social attitudes with other students, and conditioning students in group learning who interact with each other regarding learning and their friends, so that students can achieve complete learning in their learning (Ertikanto et al., 2018; Purwaningsih et al., 2020). By using the media-assisted problem based learning model, it is projected that students can improve their understanding of concepts, especially in social studies learning, and the learning process can be carried out optimally. Students' interest in learning will increase and the application of projected media can also attract students' enthusiasm in participating in the learning process. This research is limited and focused on the influence of the projected media-assisted problem based learning model on the social science knowledge competency of fifth grade students at SDN Gugus Pangeran Diponegoro for the 2022/2023 academic year.

## 4. CONCLUSION

There is a significant difference in social science knowledge competency between the group of students who were taught using the projected media-assisted problem based learning model and the

group of students who were not taught with the projected media-assisted problem based learning learning model for class V students at Gugus Pangeran Diponegoro Elementary School for the 2022/2023 academic year. The implication of this research is that the media-assisted problem based learning model is projected to increase students' understanding of concepts, especially in social studies learning and the learning process can be carried out optimally. The projected media-assisted problem based learning model can also generate student activity and creativity. There are suggestions regarding the results of this research, namely that they can be used as a reference by other research and can be applied well in the learning process to obtain satisfactory learning results and in accordance with the expected learning objectives.

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